

DESIGN SUMMARY

**LAKE TIPPECANOE
HENWOOD CREEK
RESTORATION PROJECT**

October, 2000

Prepared for:
Tippecanoe Environmental Lake and Watershed Foundation
P.O. Box 55
North Webster, Indiana 46555

Prepared by:
J. F. New & Associates, Inc.
708 Roosevelt Road
Walkerton, Indiana 46574
219-586-3400

DESIGN SUMMARY

LAKE TIPPECANOE HENWOOD CREEK RESTORATION PROJECT

EXECUTIVE SUMMARY

Twelve rock grade controls were installed and 400 feet of channel was realigned to stabilize approximately 1100 feet of Henwood Creek, a part of the Hanna B. Walker Drain. The project was designed to reduce sediment loading to Lake Tippecanoe from the banks of Henwood Creek. The grade control structures were used at key points to stop the current incision and head cutting which was leading to severe bank erosion throughout the length of the stream. The grade controls also serve to encourage the deposition of sediment within the channel, ultimately raising the bottom elevation to original grades. The new channel size is based upon the 2-year bank full channel depths of natural, stable channels. In addition, a 1200 square foot sediment trap was constructed downstream of the restoration activities to collect sediment, particularly during construction activities. To date the project has not had any significant signs of failure even after a five-inch intense precipitation event. Inspection and minor maintenance of the channel and cleaning of the sediment trap should ensure this project's success.

DESIGN SUMMARY

LAKE TIPPECANOE
HENWOOD CREEK RESTORATION PROJECT

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DESIGN SUMMARY
LAKE TIPPECANOE
HENWOOD CREEK RESTORATION PROJECT

September, 2000

SECTION I. PROJECT DESCRIPTION AND PURPOSE

Henwood Creek is a one-half mile long intermittent branch of the Hanna B. Walker Drain which flows into Lake Tippecanoe. It has a contributing watershed at the lower end of the project of approximately 342 acres. As identified within the previous study titled "Lake Tippecanoe Diagnostic Study," Henwood Creek is a source of high nutrient and sediment loads. The sediment created bars and provided substrate for the growth of dense European water milfoil beds at the mouth of this drain in the area of the channel between Lake James and Lake Tippecanoe. The project used bioengineering techniques to help repair and reverse the severe erosion of the creek bottom and banks. The technique provides a means for the creek to restore itself without expensive restoration of the banks along the entire length of the creek. The project varies from the feasibility study report which conceptually designed a one-acre sediment and nutrient filter in the same area. Local input encouraged the change in project design to act on the source of the problems instead of treating the symptoms. However, it should be noted that the designed and built project only addresses the dominant sediment source and not the nutrients. Although some of the nutrients are bound to sediments, the remaining source was from adjacent agricultural land and must be treated with another project.

The project involved the use of grade control structures at key points to stop the current incision and head cutting which was leading to severe bank erosion throughout the length of the stream. A total of eight grade controls were placed at strategic points along the existing profile to create a stable channel conforming to the ideal creek profile. Four additional grade controls within the realigned channel serve to hold the new channel in position. The grade controls also serve to encourage the deposition of sediment within the channel, ultimately raising the bottom elevation to original grades. One 400-foot section of Henwood Creek was rerouted to form a new stable channel due to the advanced stage of degradation. The new channel size is based upon the 2-year bank full channel depths of natural, stable channels. A 1200 square foot sediment trap was constructed downstream of the restoration activities to collect sediment, particularly during construction activities. Erosion control blankets and straw were used to promote the native woodland and prairie seeding. Additionally, three hundred trees and shrubs were planted in the floodplain of the stream channel after construction was completed.

SECTION II. PROJECT DESIGN DETAILS

Henwood Creek had severe bank erosion due to incising of the channel. Channel incision began in the mid 1980's as a result of "cleaning" or deepening of the channel that Henwood Creek intersected. The deepening of the receiving channel caused head cuts to work their way up Henwood Creek until stabilizing at an existing maintained stone crossing. A profile (slope) of the creek was surveyed and analyzed to identify head cuts or reaches with steeper slopes. Grade control structures were placed at strategic points along the existing profile to force the channel to conform to an even slope throughout the reach.

The grade controls were sized and strategically placed along the creek channel to force the creek grade up to a calculated two-year or bank full channel dimension. The bank full channel allows larger flood events to over-top the banks and expend energy throughout the floodplain, thereby reducing shear forces on the actual banks. Additionally, the grade controls create pools immediately upstream to encourage the deposition of sediment which reverses the incising process. This will allow natural revegetation of the banks and eventually complete stabilization of the entire project reach system over several years.

Each of the eight grade controls in the existing channel were designed to back water to the base of the next upstream structure. To achieve this, the structures were located about 200 feet apart and ranged from one-three feet high. A crest stone of larger boulders forms the base of each grade control and determines the height or thalweg of the channel. This crest stone was two feet wide and buried two feet below grade. Crest stone boulders were sized by taking measurements of rocks during a field survey of the creek. The rocks measured were ones that appeared not to have been moved during storm events (covered with moss). A safety factor of 50% larger stone was specified. The crest stone key trench was excavated 18-24 inches below grade and 24-48 inches into the sides of the creek banks. The side trench depth into the banks was determined by the width of the immediate floodplain of bank full channel but not less than $\frac{1}{2}$ of the base flow stream width. The remainder of rocks used were of smaller diameter and were used for forming a 4:1 slope on the upstream side of the crest stone and a 15:1 slope on the downstream side of the crest stone. Average rock size used in these crest stones had a median diameter of 24 inches.

Grade control structures were designed to emulate the low riffles of natural stable creeks. They perform multiple functions by stabilizing the creek bed, providing re-aeration, and creating natural pools and riffles which increase aquatic habitat.

A 400 foot portion of the existing creek was so severely eroded it was determined a passive means of restoration would prove ineffective. This stretch of channel was also heavily wooded and concerns were raised with impacts to the habitat due to construction equipment and the fact that this section had deteriorated to the point of establishing a new floodway within the original banks. This

stretch of creek was abandoned and a new, stable channel, was created to replace it. The new channel meanders through a low lying, old field habitat before rejoining Henwood Creek prior to the intersection with the other branch of Hanna B. Walker Drain. This section of new channel was completely lined with 1-6 inch rock due to the muck substrate of the field. Four grade controls in this section of the stream are built below the elevation of the grade and four feet into the banks. The purpose of these hidden grade controls is to hold the constructed channel in position.

Field investigations and site surveys were performed to determine the carrying capacity of the existing channel and recreate this capacity within the new reach. The estimates of capacity were based upon the 2-year bank full channel depths. Natural, stable channels tend to have a capacity equal to the 2-year storm event. Larger flows are encouraged to disperse into the floodplain and dissipate energy across a wider section, thereby reducing damaging bank erosion. The existing channel had the following ranges in capacity: 33 cfs in the upper reaches, 42 cfs in the middle reaches, and 50 cfs in the lower reaches. The capacity of the new reach is from 45 cfs to 65 cfs. Typical cross sections and calculations for the existing and proposed channels are attached in Appendix A. A creek crossing was constructed for the new reach to allow the owner to access the property. The crossing is constructed of two, 48" arched culverts (~36" x 58") which have a capacity to convey over 200 cfs in order to handle higher flows without the threat of a washout. An additional crossing of the old channel reach was required by the County Drainage Board as part of their permit. The County required a minimum of a 60 inch CMP. A 72 inch aluminum culvert was obtained and installed at this crossing.

A sediment trap measuring 20 feet wide by 60 feet long by 6 feet deep was constructed downstream of the junction of the two branches of Hanna B. Walker Drain. The trap was designed to collect up to 50% of the suspended solids and almost 100% of the bed load. A PVC sheet pile wall was driven into the substrate at grade on the upstream edge of the trap. The sheet pile along the upstream edge of the sediment trap insures the integrity of the trap and prevents damage upstream during maintenance activities. The calculations for the sediment trap are attached in Appendix A.

All permits necessary for this project are attached in Appendix B. Landowner agreements are located in Appendix C.

SECTION III. DESIGN SPECIFICATIONS

The following specifications were used during construction to ensure the project was built to the purpose and intent of the original design:

A. Sediment Trap Excavation

Sediment trap excavation shall be done by an excavator from the south bank to minimize impact to the site. The sediment trap shall be excavated to the lines and grades shown on the construction drawings. The spoils shall be stockpiled and placed within the abandoned stretch of creek to help stabilize the transition area to the new reach.

B. Sheet Pile

Sheet pile shall be used to form the upstream boundary of the sediment trap. Sheet pile shall be PVC sheet pile as manufactured by C-Loc. PVC sheet pile shall have a minimum yield strength of 6,350 psi (tensile) and flex strength of 8,600 psi (bending). PVC sheet pile shall be UV stabilized. Sheet pile shall be driven by an excavator in the locations shown on the construction drawings. Sheet pile shall be driven to grade.

C. Grade Control Structures

Grade controls shall be constructed to the lines and grades shown on the construction drawings. Grade controls shall be constructed of river rock of the appropriate sizes per the construction drawings. The crest stone shall be placed at the appropriate elevation using the largest required stones. A minimum slope for the upstream and downstream sides of the grade controls shall be 4 to 1 and 15 to 1 respectively. Grade controls shall be anchored into the bank a minimum distance of one-half the base flow width.

D. New Creek Channel

The new reach shall be laid to the grade and location as shown in the construction drawings. The channel shall be lined with coconut fiber erosion control blankets on the edges and 1" to 6" river rock in entire length. The channel shall be placed such that meanders and a variable thalweg shall be evident throughout. Seeding of bare earth with specified seed mixes must occur prior to erosion control blanket installation.

All excavation materials from the construction of the new channel will be placed within the abandoned channel to help restore the landscape. The old channel will initially be filled starting at the point of the proposed new channel and proceeding downstream a maximum of 50 feet as allowed by permit.

E. Planting Plan

All disturbed areas shall be planted with a seed mix labeled Wooded Wetland Understory mix or Sedge Meadow mix. The contents of these mixes are shown below. The Sedge Meadow mix should be used in wet areas along the stream. The Wooded Wetland mix should be used in all other areas. Two acres worth of Wooded Wetland mix are required. One acre of Sedge Meadow mix is required. Trees (300) shall be planted in the area of the new channel.

WOODED WETLAND MIX

Permanent Grasses and Sedges:

3.95 pounds/acre

Botanical Name

Agrostis alba palustris
Calamagrostis canadensis
Carex crinita
Carex vulpinoidea
Elymus canadensis
Elymus virginicus
Glyceria striata
Hystrix patula
Leersia oryzoides
Panicum virgatum
Spartina pectinata

Common Name

Creeping Bent Grass
Blue Joint Grass
Fringed Sedge
Brown Fox Sedge
Prairie Wild Rye
Virginia Wild Rye
Fowl Manna Grass
Bottlebrush Grass
Rice Cut Grass
Switch Grass
Prairie Cord Grass

Temporary Grasses:

55.50 pounds/acre

Botanical Name

Agrostis alba
Avena sativa
Echinochloa crusgalli
Festuca ovina
Lolium multiflorum
Phleum pratense

Common Name

Redtop
Seed Oats
Barnyard Grass
Sheep Fescue
Annual Rye
Timothy

SEDGE MEADOW MIX

Permanent Grasses and Sedges:

3.75 pounds/acre

Botanical Name

Agrostis alba palustris
Calamagrostis canadensis
Carex vulpinoidea
Echinochloa crusgalli
Elymus canadensis
Glyceria striata
Leersia oryzoides
Panicum virgatum
Scirpus atrovirens
Spartina pectinata
Sagittaria latifolia

Common Name

Creeping Bent Grass
Blue Joint Grass
Brown Fox Sedge
Barnyard Grass
Prairie Wild Rye
Fowl Manna Grass
Rice Cut Grass
Prairie Switch Grass
Dark Green Rush
Prairie Cord Grass
Arrowhead

Scirpus pungens

Scirpus validus

Silphium perfoliatum

Solidago rugosa

Sparganium americanum

Sparganium eurycarpum

Spiraea alba

Verbena hastata

Vernonia fasciculata

Zizia aurea

Temporary Grasses:

Botanical Name

Agrostis alba
Avena sativa
pratense

Chairmaker's Rush

Soft-Stem Bulrush

Cup Plant

Wrinkled Goldenrod

American Bur Reed

Common Bur Reed

Meadowsweet

Blue Vervain

Common Ironweed

Golden Alexanders

34.00 pounds/acre

Common Name

Redtop
Seed Oats
Timothy

Forbs: 3.25 pounds/acre

<u>Botanical Name</u>	<u>Common Name</u>
<i>Alisma subcordatum</i>	Water Plantain
<i>Angelica atropurpurea</i>	Great Angelica
<i>Asclepias incarnata</i>	Swamp Milkweed
<i>Aster novae-angliae</i>	New England Aster
<i>Aster puniceus</i>	Swamp Aster
<i>Aster simplex</i>	Panicled Aster
<i>Aster umbellatus</i>	Flat-top Aster
<i>Bidens cernua</i>	Swamp Marigold
<i>Cassia hebecarpa</i>	Wild Senna
<i>Coreopsis tripteris</i>	Tall Coreopsis
<i>Eupatorium maculatum</i>	Spotted Joe Pye Weed
<i>Eupatorium perfoliatum</i>	Common Boneset
<i>Gentiana andrewsii</i>	Bottle Gentian
<i>Helenium autumnale</i>	Sneezeweed
<i>Iris virginica shrevei</i>	Blue Flag Iris
<i>Juncus effusus</i>	Common Rush
<i>Liatis spicata</i>	Marsh Blazing Star
<i>Lobelia cardinalis</i>	Cardinal Flower
<i>Lobelia siphilitica</i>	Great Blue Lobelia
<i>Ludwigia alternifolia</i>	Seed Box
<i>Peltandra virginica</i>	Arrow Arum
<i>Physostegia virginiana</i>	False Dragonhead
<i>Pycnanthemum virginianum</i>	Mountain Mint

TREES (300 required)

<u>Botanical Name</u>	<u>Common Name</u>
<i>Acer rubrum</i>	Red Maple
<i>Fraxinus pennsylvanica</i>	Green Ash
<i>Juglans nigra</i>	Black Walnut
<i>Betula nigra</i>	River Birch
<i>Quercus macrocarpa</i>	Burr Oak
<i>Platanus occidentalis</i>	Sycamore
<i>Salix spp.</i>	Pussy willow
<i>Cornus spp.</i>	Dogwood

Section IV.
Construction Task and Timetable

The following tasks shall be performed during construction and by the dates shown:

<u>Task</u>	<u>Date</u>
Excavate Sediment Trap	Winter 2000
Install Creek Crossing C1	Winter 2000
Build New Channel	Winter 2000
Build Grade Control Structures	Winter 2000
Install Creek Crossing C2	Winter 2000
Restore Disturbed Areas	Winter 2000
Drive Sheet Piling	Spring 2000
Re-excavate Sediment Trap 2000	Spring 2000
Planting Plan	Spring 2000
Project Complete	Spring 2000

Section V. **Maintenance Activities**

The following maintenance activities shall be performed by the Lake Association:

<u>Frequency</u>	<u>Task</u>
Annually	Visually inspect grade controls for damage. Repair as necessary.
Annually	Visually inspect creek crossings for damage. Repair as necessary.
Annually	Visually inspect and record bank erosion status.
Annually	Measure sediment depth within trap.
As Needed	Excavate sediment when trap is more than 60% full.

The dredge spoils should be removed to a permanent disposal site. Proper permits should be obtained prior to any excavation activity. As of the date of this document, no additional permits are required to maintain the sediment trap. Maintenance is a condition of the permits.

SECTION VI.

PROJECT CONCLUSIONS

Rock grade controls were installed and channel reconstruction was implemented to stabilize approximately 1100 feet of Henwood Creek, a part of the Hanna B. Walker Drain. The project was designed to reduce sediment loading to Lake Tippecanoe using passive bioengineering techniques. The techniques provide a means for the creek to restore itself without expensive restoration of the banks along the entire length of the creek. Construction was performed during the months of February-May 2000. To date the project has not had any significant signs of failure even after a five-inch intense precipitation event. Inspection and minor maintenance of the channel and cleaning of the sediment trap should ensure this project's success.

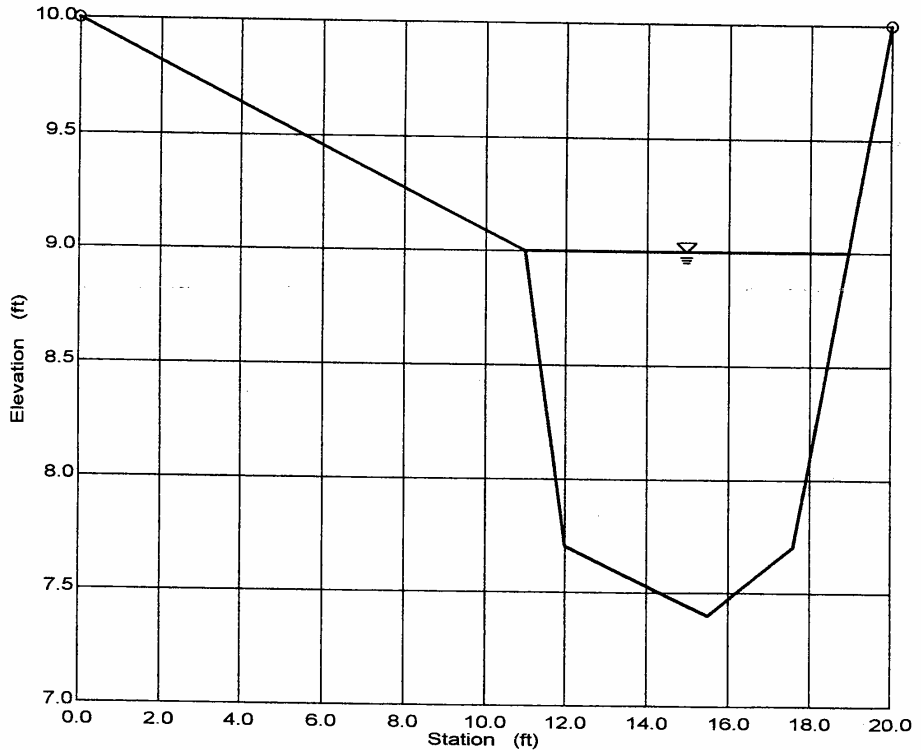
APPENDIX A

ENGINEERING CALCULATIONS

Upper Reach - Existing Channel **Cross Section for Irregular Channel**

Project Description	
Project File	r:\projec~2\lktipp~1\henwoo~1\henwood.fm2
Worksheet	2-YR Bank Full - UReach of Exist Channel
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

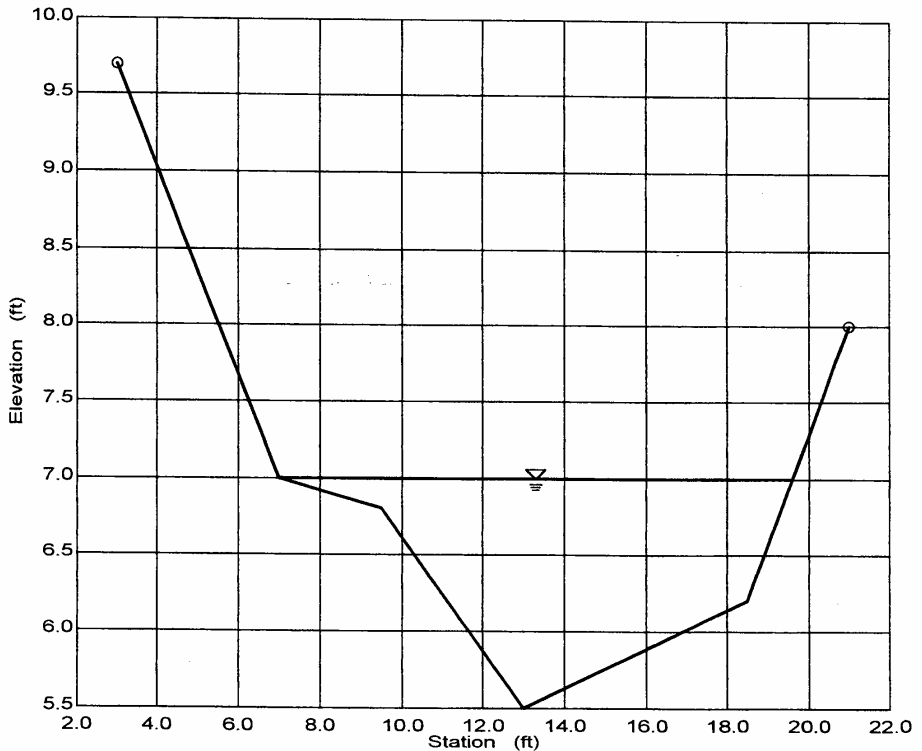
Section Data	
Wtd. Mannings Coefficient	0.045
Channel Slope	0.010000 ft/ft
Water Surface Elevation	9.00 ft
Discharge	33.02 ft ³ /s



Middle Reach - Existing Channel Cross Section for Irregular Channel

Project Description	
Project File	r:\projec~2\kipp~1\henwoo~1\henwood.fm2
Worksheet	2-YR Bank Full - MReach of Exist Channel
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

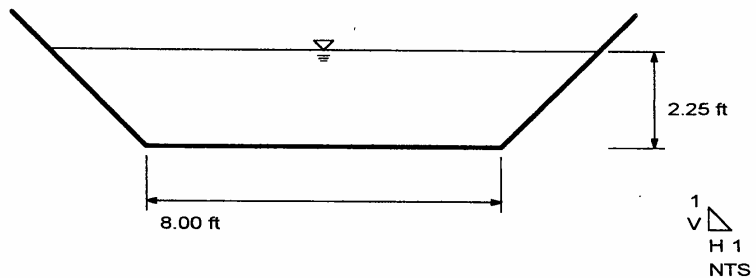
Section Data	
Wtd. Mannings Coefficient	0.030
Channel Slope	0.010000 ft/ft
Water Surface Elevation	7.00 ft
Discharge	41.22 ft ³ /s



Lower Reach - Existing Channel
Cross Section for Trapezoidal Channel

Project Description	
Project File	r:\projec-2\ktrpp-1\henwoo-1\henwood.fm2
Worksheet	Lower Reach of Existing Channel
Flow Element	Trapezoidal Channel
Method	Manning's Formula
Solve For	Discharge

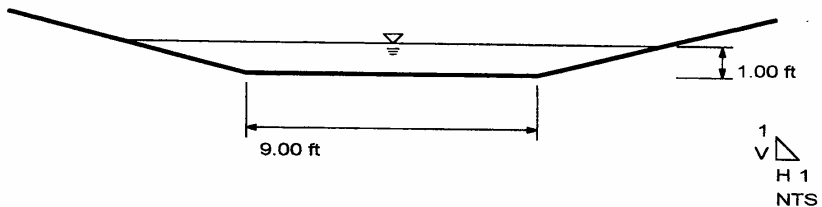
Section Data	
Mannings Coefficient	0.030
Channel Slope	0.001000 ft/ft
Depth	2.25 ft
Left Side Slope	1.00 H : V
Right Side Slope	1.00 H : V
Bottom Width	8.00 ft
Discharge	49.53 ft ³ /s



New Channel Cross Section for Trapezoidal Channel

Project Description	
Project File	r:\projec~2\lktipp~1\henwoo~1\henwood.fm2
Worksheet	New Channel
Flow Element	Trapezoidal Channel
Method	Manning's Formula
Solve For	Discharge

Section Data	
Mannings Coefficient	0.035
Channel Slope	0.018000 ft/ft
Depth	1.00 ft
Left Side Slope	4.00 H : V
Right Side Slope	4.00 H : V
Bottom Width	9.00 ft
Discharge	61.33 ft ³ /s



02/25/00

SEDIMENT.123

SEDIMENT BASIN SIZING

PROJECT NAME: Lake Tippecanoe

FILE VERSION: 2.0

STRUCTURE: Henwood Creek Sediment Basin

To calculate the initial volume needed for a rectangular sediment basin, enter the following information:

Average Soil Loss (ton/acre/yr):	3	SCS values of 2 to 5 tons/acre/yr
Contributing Watershed Area (acre):	342	
Percent Area of High Erosion Potential:	70%	
Percent Eroded Soils Reaching Waterway:	25%	
Sediment Density (lb/cf):	100	
Trapping Efficiency of Basin:	50%	

Waterway Sediment Yield (ton/yr):	179.55
Waterway Sediment Load (ac-ft/yr):	0.08
Basin Sediment Load (ac-ft/yr):	0.04
Basin Sediment Yield (ton/yr):	90

Width at Top of Basin (ft):	20	to 1
Length at Top of Basin (ft):	60	
Basin slope:	1	
Depth of Basin (ft):	6	

Width at Bottom of Basin (ft):	8	Based on 60% Capacity
Length at Bottom of Basin (ft):	48	
Volume of Basin (ac-ft):	0.11	
Maintenance Timetable (yr):	1.7	

APPENDIX B

PROJECT PERMITS



DEPARTMENT OF THE ARMY

U.S. ARMY ENGINEER DISTRICT, LOUISVILLE
CORPS OF ENGINEERS
P.O. BOX 59
LOUISVILLE, KENTUCKY 40201-0059
FAX: (502) 582-5072
February 17, 2000

Operations Division
Regulatory Branch (North)
ID No. 200000045-bkc

Mr. John B. Richardson
J. F. New & Associates, Inc.
P.O. Box 243
Walkerton, Indiana 46574

Dear Mr. Richardson:

This is in response to your request for authorization to place fill material in .25 acre of Hanna B. Walker Drain (Henwood Creek) in order to reroute the drain. The project is located in Section 8, Township 33 North, Range 7 East, in Kosciusko County, Indiana. The information supplied by you was reviewed to determine whether a Department of the Army (DA) permit will be required under the provisions of Section 404 of the Clean Water Act.

Since less than 3 acres of "waters of the United States" would be impacted by this discharge and the work site is above the headwaters of Hanna B. Walker Drain, your project is considered a discharge of fill material into a headwaters or isolated waters. The project qualifies for authorization under the provisions of Nationwide General Permit 33 CFR 330 (26), Headwaters and Isolated Waters Discharges, as published in the Federal Register, December 13, 1996. However, the Indiana Department of Environmental Management (IDEM) has denied Section 401 Water Quality Certification (WQC) for this nationwide permit.

Because IDEM has denied WQC for Nationwide Permit 26, your request is denied without prejudice until you obtain a project specific WQC or waiver from IDEM. When a State denies WQC, Nationwide Permit General Condition No. 9 requires that you obtain individual WQC or a waiver. The nationwide permit is not valid until an individual WQC is issued or waived by IDEM. The responsibility for obtaining the WQC rests with you. Please furnish a copy of your request for WQC to us.

You may request a WQC from IDEM at:

Indiana Department of Environmental Management
P.O. Box 6015
Indianapolis, Indiana 46206-6015
Telephone: (317) 243-5149.

The IDEM will typically complete its' review of your application for WQC within 60 calendar days after they receive a complete application. The IDEM may request additional information in order to process your application. If you have submitted a complete application for an individual WQC and we do not hear from IDEM within 60 days of your requesting letter, we may presume a waiver of the WQC. However,

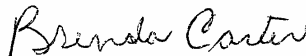
IDEM may request, and we usually grant, additional time when information is needed to complete their review. In accordance with Corps regulations, the State WQC agency must issue WQC within one year of your request or a waiver will be deemed to occur.

After you obtain your WQC or waiver letter from IDEM and furnish a copy to us, you are authorized under this NWP and may proceed with construction without further contact or verification from us. However, you must comply with the enclosed terms and conditions of the nationwide permit. If IDEM issues a WQC, you must also comply with any conditions imposed in the WQC, as it is part of your nationwide permit authorization. You do not have authorization until we receive a copy of the WQC. This nationwide permit verification is valid until **February 11, 2002**. If the project cannot be completed by this time or if your project is modified you must contact us and IDEM for another permit determination.

The enclosed Compliance Certification should be signed and returned when the project is completed. A copy of this letter is being sent to the IDEM.

If you have any questions, please contact me by writing to the above address, ATTN: CELRL-OP-FN, or by calling (502) 582-5608. Any correspondence on this matter should refer to our ID No. 200000045-bkc.

Sincerely,



Brenda Carter
Regulatory Specialist
Regulatory Branch

Enclosures



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live

Frank O'Bannon
Governor

March 6, 2000

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.state.in.us/idem

Lori F. Kaplan
Commissioner

VIA CERTIFIED MAIL P 126 008 956

00-1A

Ms. Holly LaSalle
Tippecanoe Environmental Lake & Watershed Foundation
67 EMS T49A Lane
Syracuse, IN 46567

Dear Ms. LaSalle:

Re: Section 401 Water Quality Certification
Project: Henwood Creek Grade Stabilization
IDEM ID #: 1999-346-43-RRJ-A
COE ID #: 200000045-bkc
County: Kosciusko

Office of Water Management staff have reviewed your application received December 20, 1999, and amendments received February 14, 2000, requesting Section 401 Water Quality Certification. You propose the construction of 16 glacial stone grade control structures and construction of approximately 600 feet of new channel to stabilize erosive banks of Henwood Creek. A sediment trap will be installed downstream of the new channel to prevent downstream sediment migration during construction. A culvert road crossing of the new channel and low water crossings will also be installed to provide access. No wetlands will be affected by the project.

Based on the site investigation conducted on December 29, 1999, and available information, it is the judgment of this office that the proposed project will comply with the applicable provisions of 327 IAC 2 and Sections 301, 302, 303, 306, and 307 of the Clean Water Act if the permittee complies with the conditions set forth below. Therefore, subject to the following conditions, the Indiana Department of Environmental Management (IDEM) hereby grants Section 401 Water Quality Certification for the project described in your application received December 20, 1999, and amendments received February 14, 2000. Any changes in project design or scope not detailed in the application described above are not authorized by this certification.

General Conditions:

1. Limit physical disturbance of banks, soils, and vegetation to that which is absolutely necessary to achieve the project purpose. Avoid and/or minimize

impacts to wetlands to the greatest extent possible.

2. Reseed all bare and disturbed areas with a mixture of grasses (excluding all varieties of tall fescue) and legumes upon completion.
3. Deposit any dredged material in a contained upland disposal area to prevent sediment run-off to any waterbody. Stabilize the dredged or excavated material with seed and straw mulch upon completion of construction activities.
4. Dispose of all dredged and excavated material according to the requirements of 329 IAC 10, governing Solid Waste Land Disposal Facilities. Your project information will be forwarded to the IDEM Office of Land Quality, Special Waste Section for review. They may contact you regarding the need for sediment sampling to determine if the dredged sediment is contaminated. Failure to properly dispose of contaminated sediment may result in enforcement action against you.
5. Install appropriate erosion control methods prior to any soil disturbance to prevent soil from leaving the construction site. Appropriate erosion control methods include, but are not limited to, straw bale barriers, silt fencing, erosion control blankets, phased construction sequencing, and earthen berms. Information and assistance regarding control of construction-related soil erosion are available from the Soil and Water Conservation District offices, collocated with the local field office of the USDA Natural Resources Conservation Service in each county, and the Indiana Department of Natural Resources- Division of Soil Conservation that can be reached at 317/233-3870.
6. Contact Mr. Mike Thompson of the IDEM Permits Section at 317/232-8648 regarding the requirements of the general permit rule 327 IAC 15-5 (Rule 5). All construction sites five acres or greater are subject to Rule 5, which requires an erosion control plan to be submitted to the local Soil & Water Conservation District.
7. Contact the Recommendation Section of the Indiana Department of Natural Resources at 317/232-4161 regarding the possible requirement of a permit from the Indiana Department of Natural Resources.
8. The project engineer and contractor at the construction site will ensure that construction limits shown in the attached plans will be clearly marked at all times during construction.
9. The project engineer and contractor at the construction site will ensure that all erosion control structures and devices will be regularly monitored and maintained,

especially after rain events, until all soils disturbed by construction activities have been permanently stabilized.

10. The contractor performing the actual construction operations must comply with Section 311 of the Federal Clean Water Act and with 327 IAC 2-6 concerning spills of oil and hazardous materials.
11. Unless specifically stated, depicted, or detailed in the aforementioned correspondence and project plans, no construction equipment, temporary run-arounds, coffer dams, causeways, or other such structures will be permitted to enter or be constructed within the stream. A modification of this Section 401 Water Quality Certification is required from this office if any of the aforementioned items are needed for project construction.
12. This granting of Section 401 Water Quality Certification does not relieve the permittee from the responsibility of obtaining any other permits or authorizations that may be required for this project or related activities from IDEM or any other agency or person.
13. This certification does not:
 - (1) authorize impacts or activities outside the scope of this certification;
 - (2) authorize any injury to persons or private property or invasion of other private rights, or any infringement of federal, state or local laws or regulations;
 - (3) convey any property rights of any sort, or any exclusive privileges;
 - (4) preempt any duty to obtain federal, state or local permits or authorizations required by law for the execution of the project or related activities; or
 - (5) authorize changes in the plan design detailed in the application;
14. The permittee shall allow the commissioner or an authorized representative of the commissioner (including an authorized contractor), upon the presentation of credentials:
 - (1) to enter upon the permittee's property;
 - (2) to have access to and copy at reasonable times any records that must be kept under the conditions of this certification;
 - (3) to inspect, at reasonable times, any monitoring or operational equipment or method; collection, treatment, pollution management or discharge facility or device; practices required by this certification; and any wetland mitigation site; and
 - (4) sample or monitor any discharge of pollutants or any mitigation site.
15. Failure to comply with the terms and conditions of this Section 401 Water Quality

Certification may result in enforcement action against the permittee. If an enforcement action is pursued, the permittee could be assessed up to \$25,000 per day in civil penalties. The permittee may also be subject to criminal liability if it is determined that the Section 401 Water Quality Certification was violated willfully or negligently.

Project Specific Conditions:

1. Submit a monitoring report to this office for three consecutive years. Report shall document changes in the stream stability and note any corrective actions to original proposal that may be needed. Report shall include before and after photos of problem erosive areas, of representative grade control structures, of the abandoned channel, and of the newly constructed channel.
2. Disturbed area and areas adjacent to the new channel shall be planted on 10 foot centers with suitable hardwood trees and wildlife shrubs and a suitable forested understory herbaceous mix.
3. Remove any temporary causeway or other structures used to facilitate construction upon completion of construction.

This certification is effective 18 days from the mailing of this notice unless a petition for review and a petition for stay of effectiveness are filed within this 18 day period. If a petition for review and a petition for stay of effectiveness are filed within this period, any part of the permit within the scope of the petition for stay is stayed for 15 days, unless or until an Environmental Law Judge further stays the permit in whole or in part.

This decision may be appealed in accordance with IC 4-21.5, the Administrative Orders and Procedures Act. The steps that must be followed to qualify for review are:

1. You must petition for review in a writing that states facts demonstrating that you are either the person to whom this decision is directed, a person who is aggrieved or adversely affected by the decision, or a person entitled to review under any law.
2. You must file the petition for review with the Office of Environmental Adjudication (OEA) at the following address:

Office of Environmental Adjudication
ISTA Building
150 West Market Street
Suite 618
Indianapolis, IN 46204

3. You must file the petition within eighteen (18) days of the mailing date of this decision. If the eighteenth day falls on a Saturday, Sunday, legal holiday, or other day that the OEA offices are closed during regular business hours, you may file the petition the next day that the OEA offices are open during regular business hours. The petition is deemed filed on the earliest of the following dates: the date it is personally delivered to OEA; the date that the envelope containing the petition is postmarked if it is mailed by United States mail; or, the date it is shown to have been deposited with a private carrier on the private carrier's receipt, if sent by private carrier.

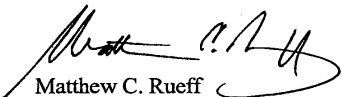
Identifying the permit, decision, or other order for which you seek review by number, name of the applicant, location, or date of this notice will expedite review of the petition.

Note that if a petition for review is granted pursuant to IC 4-21.5-3-7, the petitioner will, and any other person may, obtain notice of any prehearing conferences, preliminary hearings, hearings, stays, and any orders disposing of the proceedings by requesting copies of such notices from OEA.

If you have procedural questions regarding filing a petition for review you may contact OEA at 317-232-8591.

If you have any questions about this certification, please contact Randy Jones, Project Manager, of my staff at 317/233-2473, or you may contact the Office of Water Management through the IDEM Environmental Helpline (1-800-451-6027).

Sincerely,



Matthew C. Rueff
Assistant Commissioner
Office of Water Management Attachment

cc: Brenda Carter, COE- Louisville District
Liz McCloskey, USFWS- Warsaw
Steve Jose, IDNR
John Richardson, JF New & Associates, Inc.
Matthew Sandy, Kosciusko County Plan Commission

Send Final Plan View w/ real culvert size
↓ Cross section

Permit Application

Kosciusko County Highway Department

2936 E. Old Road 30

rsaw, Indiana 46580

Ph: (219) 372-2356 Fax: (219) 372-2357

Permit Number: 2948

Date: 11-10-97

Type of Permit: Road Cut Right-of-way Work Drainage Discharge

Type of Road Surface: Asphalt Gravel Concrete

Location: 2936 E. Old Road 30, rsaw, Indiana 46580

Purpose of Work:

General Requirements:

- If the work interferes with traffic, erect and maintain any barricades, detour signs, and warning lights necessary to safely direct traffic around the work area.
- Saw cut all asphalt or concrete roads.
- For road cuts, backfill the trench and repair the road surface in accordance with county specifications.
- For road cuts, maintain the road cut repair for a period of 1 month from the completion of the work.
- When disturbing vegetated areas, seed or sod disturbed area.
- Contact the Indiana Underground Plant Protection Service. (Ph: 800-382-5544)
- Install pipe in accordance with county specifications.

Additional Requirements:

Disclaimers:

- Should future road, right-of-way, or drainage improvements by the Kosciusko County Highway Department necessitate the removal of a structures installed under this permit, the owner is to remove or relocate said structures at his expense.
- Approval of this permit by the Kosciusko County Highway Department does not imply approval from the landowner. Landowner approval, if necessary, must be obtained directly from the landowner.
- Permit holder assumes all responsibility for any injuries or damages resulting from work associated with the permit.
- Permit expires one year from the date of issuance.

Permit Fee: 1200

Approved: Robert J. Jackson
County Highway Engineer

Date: 12-10-97

Signature of Applicant

Name of Individual or Company

Address

Telephone Number

Kosciusko County Surveyor

Courthouse
100 W. Center Street
Warsaw, IN 46580



Richard J. Kemper LS

219-372-2367

January 6, 2000

Mr. John Richardson
J.F. New & Associates
708 Roosevelt Rd
Walkerton, In 46574

Re: Hanna Walker drain/culvert crossing

John:

In regard to culvert pipe to be placed in the Hanna Walker drain, I would recommend a minimum area of 16 sq/ft or the equivalent of a 60" round pipe.

I look forward to working with you further on this project.

Thanks in advance.

Yours truly,

Richard Kemper
Kosciusko County Surveyor

APPENDIX C

LANDOWNER AGREEMENTS

**AGREEMENT FOR THE PURPOSE OF
ACCESS FOR RECONSTRUCTION AND MAINTENANCE OF HENWOOD CREEK**

This Agreement, made and entered into on this 7 day of October, 2000, by and between Leroy Henwood and Judy Henwood, husband and wife, (hereinafter referred to as "Henwood"), and the Tippecanoe Environmental Lake and Watershed Foundation, a not-for-profit corporation organized under the laws of the State of Indiana, (hereinafter referred to as "Foundation"),

WITNESSETH:

Henwood, in consideration of the rents and covenants herein contained, does hereby enter in this Agreement for access to and the use and maintenance of real property located in Tippecanoe Township, Kosciusko County, Indiana in the Northwest Quarter of Section 8, Township 33 North, Range 7 East and more particularly described as a portion of that property found at deed record 244, page 693 in the Office of the Kosciusko County Recorder (hereinafter often referred to as the "Property") and does grant to Foundation access to said Property for excavation and reconstruction of Henwood Creek.

WHEREAS, Foundation is a not-for-profit Indiana Corporation which is dedicated to improving the water quality of Tippecanoe Lake, located in Kosciusko County, Indiana; and

WHEREAS, Foundation wishes to undertake activities, including excavation, construction and maintenance on the Property as part of its Lake Enhancement project to improve the water quality of Tippecanoe Lake, located in Kosciusko County, Indiana; and

WHEREAS, Henwood is in agreement with Foundation's desire to improve the water quality of Tippecanoe Lake.

NOW, THEREFORE, Henwood, for themselves, their successors and assigns, and their administrators, in consideration of the covenants, undertakings and agreements hereinafter set forth, and in consideration of the sum of Ten Dollars (\$10.00) and other valuable consideration, the receipt of which is hereby acknowledged, hereby grants reasonable access to Foundation to Property described hereinabove under the following terms and conditions:

AGREEMENT PART I - ACCESS

1. REFERENCE. Agreement Part I shall refer to the access unto the Property as designated on the attachment marked "Exhibit A."

2. TERM. The term shall commence on the day this agreement is signed by the parties hereto and shall continue for a term of twenty years (20). It is further agreed that this agreement, or as modified at that time by the parties, shall be renewable at the written request of either party sixty days (60) prior to the expiration of said agreement.

3. USE.

A. Henwood grants to Foundation, their agents and assigns, the right to do specific acts on the Property as set out herein and Henwood retains all rights to the Property, subject to those rights granted to the Foundation.

B. Henwood grants Foundation reasonable right of access for the purpose of construction, maintenance, inspection, and reconstruction, if needed, to the Henwood Creek as defined on the engineering drawings for the Henwood Creek Restoration project.

C. Henwood grants to the Foundation access, as delineated specifically on the attachment marked "Exhibit A" and are designated as "Existing Lanes", "Existing Driveway Access" and "Open Field Access (with permission of Henwood)". These above mentioned access points are located off of 500 E Road extending southerly over and to the Property. Henwood grants the rights to ingress and egress from the property as well as reasonable access on, over and along the said access area for the purpose of the construction, inspection, maintenance and repair of the structures and vegetation of the property, provided, that the Foundation shall give prior notice of their intentions before entering upon the Property. Henwood, for themselves, their heirs, assigns and administrators agree that reasonable access shall be maintained and in the event of construction or building upon the existing access during the term of this agreement, the Foundation shall be so advised of changes and setting out of the alternate access to the Property.

AGREEMENT PART II - GENERAL PROVISIONS

1. MANAGEMENT.

A. Henwood agrees that Foundation and its agents shall be permitted to enter onto the Property with such machinery, materials and equipment and the personnel and workers to operate said machinery and equipment to carry out the Intended Use of the Property by Foundation, including, but not limited to , the construction, inspection of, maintenance and repair of earthen berm and creeks and the planting of vegetation. It is agreed that all improvements shall stay with the land.

B. Henwood agrees that Foundation shall have the right to take such tests and borings on the Property as Foundation deems necessary to carry out its intended Use, and to take photographs of the Property, provided, Henwood is advised of such borings, tests, and photographs, and the necessity of such.

C. Henwood limits the rights granted to Foundation as contained herein and that the Foundation may enter onto the Property for the intended use as described, and not for the recreational use by Foundation and/or its agents, or the general public.

D. Rights to the Property shall be retained by Henwood. Further, Henwood agrees to not interfere with those activities agreed upon between the parties, provided, that Foundation has not deviated from said agreement of intended use without first securing the permission or written agreement from Henwood.

E. Foundation shall give notice to Henwood of its intention to enter onto the Property for purposes of inspection, maintenance and repair of structures, reconstructed areas and vegetation of the Property. Foundation shall not enter Property without permission from Henwood, which permission will not be unreasonably withheld.

F. Upon completion of the project, although Foundation will retain maintenance rights to the reconstructed area, Henwood may manage and control plant and animal life on the Property.

2. TAXES. Real and personal property taxes shall be borne by Henwood, or their successors and/or assigns, and assessment(s) shall also be borne by the same unless the assessment(s) is specifically due to the reconstruction efforts of Foundation; in such event, the applicable assessment shall be borne by Foundation during the term of this agreement or future agreements.

3. CONDEMNATION. Henwood agrees that if the Property, or any part thereof, shall be taken or condemned for public or quasi-public use or purpose by any competent authority, Foundation shall have the right to defend against such attempted condemnation of the Property or any part thereof. If, in the opinion of Foundation, the Property becomes unmanageable or unsuitable for its Intended Use and Purpose as a result of such condemnation, this Agreement may be terminated by Foundation upon sixty (60) days written notice to Henwood.

4. LIABILITY/INSURANCE.

A. Nothing in this Agreement shall be construed as imposing any additional liability on Henwood. Foundation shall name Henwood as additional insured on Foundation's liability policy. Prior to the start of construction and throughout the term of the Agreement thereafter, Foundation shall carry a policy of public liability insurance covering all of its activities on the Property. At the request of Henwood, Foundation shall provide Henwood with a certificate or other evidence that such insurance is in effect.

B. Foundation shall be responsible for and shall indemnify and hold Henwood harmless from any and all costs, including but not limited to, the expense of defending any claim of legal action, related to any injury or damage to Foundation, Henwood or any other party or caused by or resulting from Foundation's activities on the Property.

C. Foundation shall be responsible for all damages as a result of a failure of any earthen dams used in the reconstruction project unless such failure is a direct result of actions of Henwood causing such failure.

5. DAMAGES.

A. Foundation shall restore all road surfaces owned by Henwood to their original condition if said surfaces are damaged by equipment and/or machinery used by foundation and its agents during ingress and egress from the Property.

B. Before final completion of the work on said premises, Foundation and its agents shall adequately clean up the construction site to the complete satisfaction of Henwood.

C. This commitment pertains to construction, repair and maintenance done by Foundation and its agents on the Property.

6. EXPENSE. Foundation shall be responsible for all expenses incurred in the construction, repair, use, inspection and maintenance of the Intended Use of the Property by Foundation as set out in Part I of this Agreement.

7. NO LIEN AGREEMENT. In consideration of the rents and covenants herein contained, Foundation, for itself and for all contractors, subcontractors, laborers, or persons performing labor upon or furnishing materials or machinery for the Intended Use of the Property as set out herein, agrees that:

A. No lien shall attach to the Property or to Henwood's property, or to any structure or other improvement to be constructed on the Property; and

B. Any recording of this Agreement is intended solely for the purpose of giving proper notice as provided under IC 32-8-3-1 et seq.; and no lien whatsoever is created against the real estate as the result of the execution or recordation of this Agreement.

8. TRESPASS. Henwood grants to Foundation and its agents permission to enter onto the Property at any time, with proper notice, to carry out its Intended Use as set out herein. All others shall be considered trespassers on the Property unless the party has permission of Henwood to be on the Property.

9. DEFAULT.

A. Breach of any covenant herein shall constitute a default under this Agreement. In the event of a default, the defaulting party shall be entitled to thirty (30) days written notice specifying the nature of the default and giving the defaulting party an opportunity to cure the default. If the default is not corrected within thirty (30) days after written notice is received, the injured party may elect to terminate this Agreement.

B. If the use intended for the Property is not approved by any governmental agency having jurisdiction over the reconstruction project, Foundation and Henwood shall each have the right to terminate the Agreement by giving written notice to the other party. Within sixty (60) days from the date the notice is received by Henwood, the Agreement shall be null and void.

10. NOTICE. Any notice required by this Agreement shall be served upon the other party by mail at the address set forth below or at such other address as the parties may hereinafter designate:

Leroy and Judy Henwood
6706 N 500 E
Syracuse, Indiana 46567

Tippecanoe Environmental Lake
And Watershed Foundation
Post Office Box 55
North Webster, Indiana 46555

11. AGENTS. Where in this instrument rights are given to either the Tippecanoe Environmental Lake and Watershed Foundation or Henwood, such rights shall also extend to the agents or employees of the parties.

12. BINDING EFFECT. This Agreement shall become effective at the time construction on the Property begins and shall be binding upon Henwood, their heirs, personal representatives, successors and assigns and upon Foundation and Foundation's successor organizations.

13. TITLE. Henwood hereby represent and warrant that they are owners of the Property covered by this Agreement and that they have the right to enter into this Agreement and to bind themselves and their heirs, successors, assigns, and personal representatives.

14. This Agreement shall be interpreted under the laws of the State of Indiana.

15. Headings are for reference only and do not affect the provisions of this Agreement.

16. Where appropriate, the singular shall include the plural.

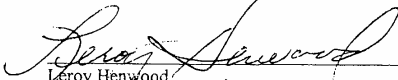
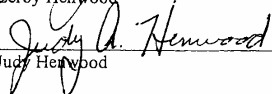
17. This Agreement contains all of the agreements of the parties, all prior negotiations, understandings and agreements having been merged into it. Amendments of this Agreement shall not be effective unless made in writing and signed by the parties.

18. In the event the Tippecanoe Environmental Lake and Watershed Foundation should cease to exist, the Agreement shall be binding upon the organization that succeeds the said association, provided that the succeeding organization's membership consists of property owners of real estate on Tippecanoe Lake, Kosciusko County, Indiana.

19. This Agreement or a Memorandum thereof shall be recorded in the Office of the Recorder of Kosciusko County, Indiana. The Foundation shall pay the recording fee.

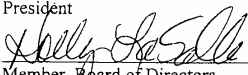
20. Any person signing this Agreement in a representative capacity for a party affirms under the penalties for perjury that he or she has the actual authority to so sign.

IN WITNESS WHEREOF, Leroy Henwood and Judy Henwood and Tippecanoe Environmental and Watershed Foundation, by its agents, have caused this Agreement to be executed on the day and year above first written with the following signatures.


Leroy Henwood

Judy Henwood

"Henwood"

TIPPECANOE ENVIRONMENTAL LAKE AND
WATERSHED FOUNDATION
BY:

President


Member, Board of Directors

"Foundation"


STATE OF INDIANA
COUNTY OF KOSCIUSKO, SS:

Before me, a Notary Public in and for said County and State, on the 7th day of October, 2000, personally appeared Leroy Henwood and Judy Henwood, and each acknowledged the execution of the above and foregoing Agreement to his or her voluntary act and deed.

WITNESS my hand and Notarial Seal.

My Commission Expires:

6-14-08



Marcia A. McNagry Notary Public
Resident of Whitley County, Indiana

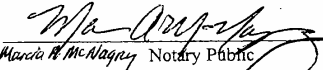
STATE OF INDIANA
COUNTY OF KOSCIUSKO, SS:

Before me, a Notary Public in and for said County and State, personally appeared Holly LaSalle, president and member of Board of Directors, respectively, of Tippecanoe Environmental Lake and Watershed Foundation, who, having been duly sworn, acknowledged the execution of the above and foregoing Agreement as officer and a member of the board of directors for and on behalf of said Tippecanoe Environmental Lake and Watershed Foundation and by authority of its board of directors this 7th day of October, 2000.

WITNESS my hand and Notarial Seal.

My Commission Expires:

6-14-08



Marcia A. McNagry Notary Public
Resident of Whitley County, Indiana

This instrument prepared by: Marcia A. McNagry, Supreme Court ID # 15788-92, MYERS TISON HOCKEMEYER & McNAGNY, 202 W. Van Buren Street, Suite A, Columbia City, Indiana 46725.

LEROY ALAN & JOY ANN HENWOOD
DEED 244, PAGE 493

CONSTRUCTION UNITS

NOTE: MATS OR PLYWOOD SHALL BE USED TO
PROTECT LAWN AREAS.

OPEN FIELD ACCESS

PAPERILL 6" UNDERDRAINS
INSTALLED UNDER GRADE
CONTROL STRUCTURES
15'-16'

ORDER CROSSING C3

NOTE: GRADE CONTROL STRUCTURES ARE SHOWN AT APPROXIMATE LOCATIONS.
FIELD STAKING IS REQUIRED FOR CONSTRUCTION AT EXACT LOCATIONS.

Continuation of Henwood Property Boundary

DATE	
BY	
CHECKED BY	
DATE	



F. H. & Associates, Inc.
Professional Engineers
1000 1st Ave. S.W.
Birmingham, AL 35203
Phone: (205) 325-1111
Fax: (205) 325-1112
E-mail: fha@fha.com

DATE	12/14/00
DESIGNED BY	AL
CHECKED BY	ALB
DATE	DECEMBER, 1990
DATE	01-26-01

HENWOOD PROPERTY
HENWOOD CREEK RESTORATION

FIELD PLAN

DATE	
BY	
CHECKED BY	
DATE	

2

EXHIBIT A

**AGREEMENT FOR THE PURPOSE OF
ACCESS FOR RECONSTRUCTION AND MAINTENANCE OF HENWOOD CREEK**

This Agreement, made and entered into on this 17 day of August, 2000, by and between Richard M. Clay and Anna L. Clay, husband and wife, (hereinafter referred to as "Clay"), and the Tippecanoe Environmental Lake and Watershed Foundation, a not-for-profit corporation organized under the laws of the State of Indiana, (hereinafter referred to as "Foundation"),

WITNESSETH:

Clay, in consideration of the rents and covenants herein contained, does hereby enter in this Agreement for the reasonable access to and the use and maintenance of real property located in Tippecanoe Township, Kosciusko County, Indiana in the Northwest Quarter of Section 8, Township 33 North, Range 7 East (hereinafter often referred to as the "Property") and does hereby grant to Foundation reasonable access to said Property for excavation and construction of a certain sediment basin, traps, and the reconstruction of Henwood Creek.

WHEREAS, Foundation is a not-for-profit Indiana Corporation which is dedicated to improving the water quality of Tippecanoe Lake, located in Kosciusko County, Indiana; and

WHEREAS, Foundation wishes to undertake activities, including excavation, construction and maintenance on the Property as part of its Lake Enhancement project to improve the water quality of Tippecanoe Lake, located in Kosciusko County, Indiana; and

WHEREAS, Clay is in agreement with Foundation's desire to improve the water quality of Tippecanoe Lake.

NOW, THEREFORE, Clay, for themselves, their successors and assigns, and their administrators, in consideration of the covenants, undertakings and agreements hereinafter set forth, hereby grants reasonable access to Foundation to the Property described hereinabove under the following terms and conditions:

AGREEMENT PART I - ACCESS

1. REFERENCE. Agreement Part I shall refer to the right of entry over and upon land lying within seventy-five (75) feet of the regulated county drain located on the Property which right is further delineated at Indiana Code 36-9-27-33.

2. TERM. The term shall commence on the first day of construction on the Property and continue for a period of twenty (20) years. On or about the ten (10) year anniversary date of the term, the project shall be reviewed by Clay and Foundation for the purposes of determining whether further repair or improvement is needed. For purposes of renewal of the Access Easement, the Agreement shall be reviewed every twenty (20) years. If construction is not begun by June 1, 2000, this Agreement shall be considered null and void.

3. USE.

A. Clay grants to Foundation, their agents and assigns, the right to do specific acts on the Property as set out herein and Clay retains all rights to the Property that do not infringe on or impede on the rights granted to Foundation.

B. Clay grants Foundation reasonable right of access via CR 650 North, 600' east of 500 East to an existing road on Clay's property with entrance off of the north side of CR 650 North and extending northwardly across Clay's field and property and the proposed Henwood Creek and more specifically delineated on the attachment marked Exhibit "A".

C. Clay grants to Foundation the right of ingress and egress to and from the Property as well as reasonable access on, over and along the said access area for the purpose of the construction, inspection, maintenance and repair of the structures and vegetation on the Property. Clay, for themselves, their heirs, assigns and administrators agree that reasonable access will be maintained and in the event of construction or building upon the existing access during the term of this Agreement, the Foundation shall be so advised of changes and setting out of an alternate access to the Property.

AGREEMENT PART II - SEDIMENT TRAP AND HENWOOD CREEK

1. REFERENCE. Agreement Part II shall refer to the sediment trap area and proposed Henwood Creek reconstruction as designated on the attachment marked Exhibit "A".

2. TERM. The term shall commence on the first day of construction on the Property and continue for a term of twenty (20) years from the date of the signing of the Agreement. On or about the ten (10) year anniversary date of the term, the sediment trap and Henwood Creek projects shall be reviewed by Clay and Foundation for the purpose of determining whether further repair or improvement is needed. If initial construction is not begun by July 1, 2000, this entire Agreement shall be considered null and void.

3. USE.

A. Clay grants to Foundation, their agents and assigns, the right to do specific acts on the Property as set out herein and Clay retains all other rights to the Property that do not infringe on or impede on the rights granted to Foundation.

B. Clay grants Foundation the right to construct and maintain the sediment trap and reconstruct Henwood Creek as defined on the engineering drawings for the Henwood Creek Restoration Project #95-08-22-03.

The sediment trap will function as an sedimentation basin and as an area for the removal of nutrients. Clay agrees to Foundation's right to plant vegetation on the Property and to maintain control of the design elevation of the sediment trap area and the reconstruction of Henwood Creek. This paragraph B represents the Intended Use of the Property by the Foundation.

AGREEMENT PART III - PROVISIONS RELATING TO BOTH PARTS I AND II

I. MANAGEMENT.

A. Clay agrees that Foundation and its agents shall be permitted to enter onto the Property with such machinery, materials and equipment and the personnel and workers to operate said machinery and equipment to carry out the Intended Use of the Property by Foundation, which shall be limited to the construction, inspection of, maintenance and repair of earthen berm and creeks and the planting of vegetation. It is agreed that all improvements shall stay with the land.

B. Clay agrees that Foundation shall have the right to take such tests and borings on the Property as Foundation deems necessary to carry out its Intended Use, and to take photographs of the Property.

C. Clay limits the rights granted to Foundation as follows: Foundation may enter onto the Property only for activities directly related to the Intended Use of the Property and not for the recreational use by Foundation and/or its agents, or the general public.

D. All rights to the Property shall be retained by Clay.

E. Foundation shall give notice to Clay of its intention to enter onto the Property for purposes of inspection, maintenance and repair of structures, sediment trap and vegetation. Foundation shall not enter the Property without permission from Clay, which permission will not be unreasonably withheld.

F. Upon completion of the sediment trap, although Foundation will retain maintenance rights to the trap, Clay shall be allowed to manage and maintain the sediment trap area. Clay agrees to refrain from altering the sediment trap from that set out in the design defined in the Engineering Drawings for the Henwood Creek Restoration Project #95-08-22-03. Clay shall manage and control plant and animal life on the Property.

2. TAXES. Real and personal property taxes and assessments shall be borne by Clay, and/or their successors and/or assigns during the term of this agreement.

3. CONDEMNATION. Clay agrees that if the Property, or any part thereof, shall be taken or condemned for public or quasi-public use or purpose by any competent authority, Foundation shall have the right to defend against such attempted condemnation of the Property or any part thereof. If, in the opinion of Foundation, the Property becomes unmanageable or unsuitable for its Intended Use and Purpose as a result of such condemnation, this Agreement may be terminated by Foundation upon sixty (60) days written notice to Clay.

4. LIABILITY/INSURANCE.

A. Nothing in this Agreement shall be construed as imposing any additional liability on Clay. Foundation shall name Clay as additional insured on Foundation's liability policy. Prior to the start of construction and throughout the term of the Agreement thereafter, Foundation shall carry a policy of public liability insurance covering all of its activities on the Property. At the request of Clay, Foundation shall provide Clay with a certificate or other evidence that such insurance is in effect.

B. Foundation shall be responsible for and shall indemnify and hold Clay harmless from any and all costs, including but not limited to, the expense of defending any claim of legal action, related to any injury or damage to Foundation, Clay or any other party or caused by or resulting from Foundation's activities on the Property.

C. Foundation shall be responsible for all damages as a result of a failure of any culverts, rock grade controls or pilings used to construct the project unless such failure is a direct result of actions of Clay.

D. Foundation shall be responsible for removal and disposal of all "cleanings" from the sediment basin and traps. No sediment shall be spread upon the Property. Sediment shall be removed from the Property and disposed of properly.

5. DAMAGES.

A. Foundation shall restore all road surfaces owned by Clay to their original condition if said surfaces are damaged by equipment and/or machinery used by Foundation and its agents during ingress and egress from the Property.

B. Before final completion of the work on said premises, Foundation and its agents shall adequately clean up the construction site to the complete satisfaction of Clay.

C. This commitment pertains to construction, repair and maintenance done by Foundation and its agents on the Property.

6. EXPENSE. Foundation shall be responsible for all expenses incurred in the construction, repair, use, inspection and maintenance of the Intended Use of the Property by Foundation as set out in Parts I and II of this Agreement.

7. NO LIEN AGREEMENT. In consideration of the rents and covenants herein contained, Foundation, for itself and for all contractors, subcontractors, laborers, or persons performing labor upon or furnishing materials or machinery for the Intended Use of the Property as set out herein, agrees that:

A. No lien shall attach to the Property or to Clay's property, or to any structure or other improvement to be constructed on the Property; and

B. Any recording of this Agreement is intended solely for the purpose of giving proper notice as provided under IC 32-8-3-1 et seq.; and no lien whatsoever is created against the real estate as the result of the execution or recordation of this Agreement.

8. TRESPASS. Clay grants to Foundation and its agents permission to enter onto the Property at any time to carry out its Intended Use as set out herein. All others shall be considered trespassers on the Property unless the party has permission of Clay to be on the Property.

9. DEFAULT.

A. Breach of any covenant herein shall constitute a default under this Agreement. In the event of a default, the defaulting party shall be entitled to thirty (30) days written notice specifying the nature of the default and giving the defaulting party an opportunity to cure the default. If the default is not corrected within thirty (30) days after written notice is received, the injured party may elect to terminate this Agreement.

B. If the use intended for the Property is not approved by any governmental agency having jurisdiction over the construction and maintenance of the sediment traps and the reconstruction of creeks, Foundation and Clay shall each have the right to terminate the Agreement by giving written notice to the other party. Within sixty (60) days from the date the notice is received by Clay, the Agreement shall be null and void.

C. If the construction for the Intended Use as set out in this Agreement is not completed by June 1, 2002, then Clay shall have the right to give written notice to Foundation to terminate the Agreement and Foundation shall have fifteen (15) days in which to complete the project as set forth herein. If the construction for the Intended Use is not accomplished within said fifteen (15) day period from the date the notice is received by Foundation, the Agreement shall be considered null and void. Provided, however, that if Foundation's delay is due to environmental factors out of its control (such as weather conditions), Foundation shall have thirty (30) days in which to complete the project as set out in this Agreement.

10. NOTICE. Any notice required by this Agreement shall be served upon the other party by mail at the address set forth below or at such other address as the parties may hereinafter designate:

Richard and Anna Clay
104 North Cheyenne Drive
Warsaw, Indiana 46582

Tippecanoe Environmental Lake
And Watershed Foundation
Post Office Box 55
North Webster, Indiana 46555

11. AGENTS. Where in this instrument rights are given to either the Tippecanoe Environmental Lake and Watershed Foundation or Clay, such rights shall also extend to the agents or employees of the parties.

12. BINDING EFFECT. This Agreement shall become effective at the time construction on the Property begins and shall be binding upon Clay, their heirs, personal representatives, successors and assigns and upon Foundation and Foundation's successor organizations.

13. TITLE. Clay hereby represent and warrant that they are owners of the Property covered by this Agreement and that they have the right to enter into this Agreement and to bind themselves and their heirs, successors, assigns, and personal representatives.

14. This Agreement shall be interpreted under the laws of the State of Indiana.

15. Headings are for reference only and do not affect the provisions of this Agreement.

16. Where appropriate, the singular shall include the plural.

17. This Agreement contains all of the agreements of the parties, all prior negotiations, understandings and agreements having been merged into it. Amendments of this Agreement shall not be effective unless made in writing and signed by the parties.

18. In the event the Tippecanoe Environmental Lake and Watershed Foundation should cease to exist, the Agreement shall be binding upon the organization that succeeds the said association, provided that the succeeding organization's membership consists of property owners of real estate on Tippecanoe Lake, Kosciusko County, Indiana.

19. In computing a time period prescribed in this Agreement, the day of the act or event shall not be counted. All subsequent days, including intervening weekend days and holidays, shall be counted in the period.

20. This Agreement or a Memorandum thereof shall be recorded in the Office of the Recorder of Kosciusko County, Indiana. The Foundation shall pay the recording fee.

21. Any person signing this Agreement in a representative capacity for a party affirms under the penalties for perjury that he or she has the actual authority to so sign.

IN WITNESS WHEREOF, Richard M. Clay and Anna L. Clay and Tippecanoe Environmental and Watershed Foundation, by its agents, have caused this Agreement to be executed on the day and year above first written with the following signatures.


Richard M. Clay


Anna L. Clay

"Clay"

TIPPECANOE ENVIRONMENTAL LAKE AND
WATERSHED FOUNDATION
BY:

President 
Member, Board of Directors

"Foundation"

STATE OF INDIANA
COUNTY OF KOSCIUSKO, SS:

Before me, a Notary Public in and for said County and State, on the 17 day of August 2000, personally appeared Richard M. Clay and Anna L. Clay, and each acknowledged the execution of the above and foregoing Agreement to his or her voluntary act and deed.

WITNESS my hand and Notarial Seal.

My Commission Expires:

April 13, 2008

Sharon Vargo
Sharon Vargo
Notary Public

Resident of Kosc. County, Indiana

STATE OF INDIANA
COUNTY OF KOSCIUSKO, SS:

Before me, a Notary Public in and for said County and State, personally appeared Notary Kasalle, president and member of Board of Directors, respectively, of Tippecanoe Environmental Lake and Watershed Foundation, who, having been duly sworn, acknowledged the execution of the above and foregoing Agreement as officer and a member of the board of directors for and on behalf of said Tippecanoe Environmental Lake and Watershed Foundation and by authority of its board of directors this 17 day of August, 2000.

WITNESS my hand and Notarial Seal.

My Commission Expires:

April 13, 2008

Sharon Vargo
Sharon Vargo
Notary Public

Resident of Kosc. County, Indiana

Scale: 1" = 20'

Construction Access Limits

NOTE: GRADE CONTROL STRUCTURES ARE SHOWN AT APPROXIMATE LOCATIONS.
FIELD STAKING IS REQUIRED FOR CONSTRUCTION AT EXACT LOCATIONS.

PROPOSED HENWOOD CREEK

PROPOSED ACCESS DRIVE

E Proposed Channel

WICKED R. & ARRL J. CLAY
2887 MS, TAGE EST
A10 1000

NORTHEAST COLUMBIA
RVC. 8-1200-1012

PVC WALL, 6' PILING
DRIVEN TO GRADE

SEDIMENT TRAP

PVC WALL, 6' PILING
DRIVEN TO GRADE

HARVEY B. WALKER
LEGAL DRAIN

Culvert, 24" x 60" CMP or
EQUIVALENT

20' x 20' SIGN

CLAY PROPERTY
HENWOOD CREEK RESTORATION

DATE	
BY	
CHECKED BY	
APPROVED BY	



F. H. & Associates, Inc.
Engineering, Surveying, Construction Management
1000 N. 10th St., Suite 100
Tomball, TX 77375
Tel: 281-291-1111
Fax: 281-291-1112

PROJECT NO.	10/000
DATE	10/000
REVISIONS	10/000
DATE	10/000

CLAY PROPERTY	10/000
HENWOOD CREEK RESTORATION	10/000

DRAWING NO.	1
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EXHIBIT